



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

February 9, 1971

Docket No. 50-155

Consumers Power Company
ATTN: Mr. Gerald J. Walke
Nuclear Fuel Management
Administrator
212 West Michigan Avenue
Jackson, Michigan 49201

Change No. 22
License No. DPR-6

Gentlemen:

Your Proposed Change No. 23 dated December 18, 1970, requested changes to the Technical Specifications of Facility License No. DPR-6 to permit operation of the Big Rock Point Nuclear Reactor with an instrumented fuel rod inserted in the reactor core. The fuel rod would be instrumented with thermocouples inside the cladding and the rod installed in a modified Reload-F fuel bundle to measure clad temperatures for analysis of crud laydown rates and the associated heat transfer phenomena. We have redesignated your request Proposed Change No. 22.

We agree that the nuclear and thermal-hydraulic characteristics of the instrumented Reload-F bundle will be essentially the same as those for the standard Reload-F bundles previously approved. Consequently, we have concluded that installation of an instrumented fuel rod in a modified Reload-F fuel bundle will not change the nuclear and thermal performance characteristics of the reactor significantly nor compromise the primary reactor system integrity, and that the change does not present significant hazards considerations not described or implicit in the safety analysis report. There is reasonable assurance that the health and safety of the public will not be endangered by operation of the Big Rock Point Nuclear Reactor with the instrumented fuel rod in the core in the manner proposed.

Accordingly, pursuant to Section 50.59 of 10 CFR Part 50, the Technical Specifications of Facility License No. DPR-6 are hereby changed as indicated in Attachment A to this letter.

Sincerely,

A handwritten signature in dark ink, appearing to read "Peter A. Morris", is written over the typed name.

Peter A. Morris, Director
Division of Reactor Licensing

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Enclosure:
Attachment A - Changes to
Technical Specifications

cc: George F. Trowbridge, Esquire

ATTACHMENT A

CHANGE NO. 22 TO TECHNICAL SPECIFICATIONS

FACILITY LICENSE NO. DPR-6

CONSUMERS POWER COMPANY

DOCKET NO. 50-155

1. In Section 8.1, change the first paragraph to read as follows:

"The general dimensions and configuration of the developmental fuel designs shall be as shown in Figures 8.1 through 8.5. The principal design features shall be substantially those shown in Table 8.1."
2. In Section 8.1, add Figure 8.5, Big Rock Point F Fuel with Instrumented Fuel Rod.
3. Add a new Section 8.1.3 to read:

"8.1.3 Instrumented Fuel Bundle

One Reload-F fuel bundle may be modified to include an instrumented fuel rod. The instrumented fuel rod shall incorporate Reload-F design and fabrication features except that provision shall be made to locate thermocouples in the fuel rod and to extend thermocouple leads from the rod to a penetration seal in the reactor pressure vessel head.

Nuclear and thermal-hydraulic characteristics of the instrumented fuel bundle shall be the same as for Reload-F bundles."
4. In Section 8, add the attached column and footnotes to Table 8.1.

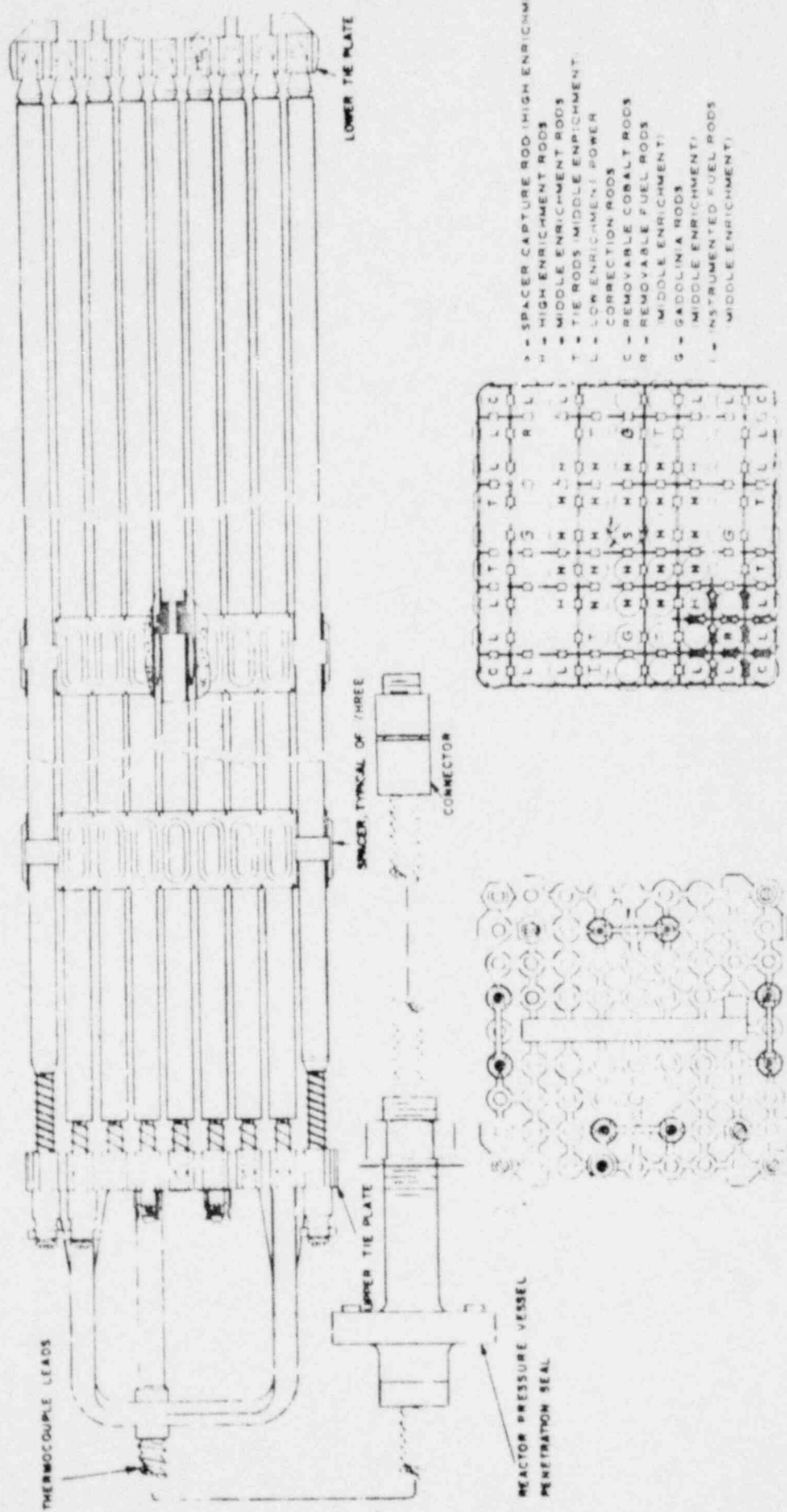
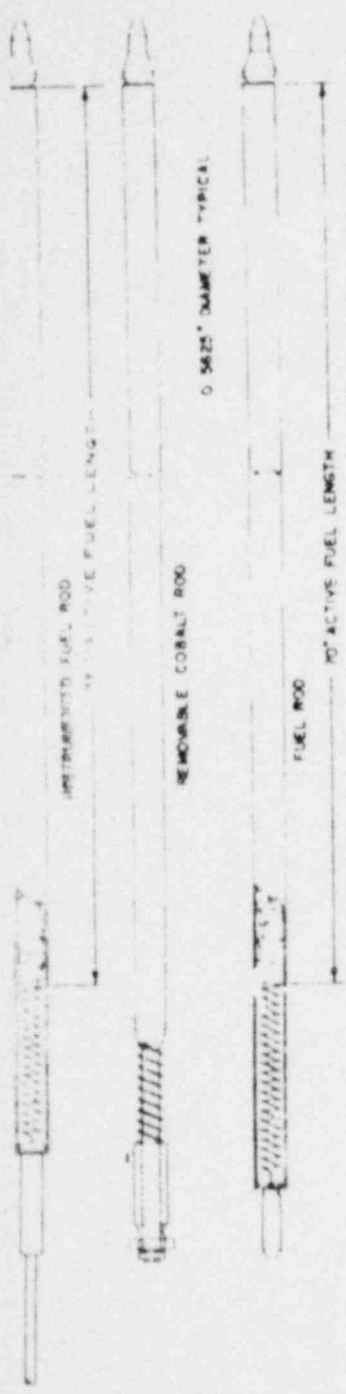
Section 8 -- Table 8.1 (Column and footnotes to be added):

	<u>"Reload (F) With Instrumented Fuel Rod</u>
<u>General</u>	
Geometry	9 x 9
Rod Pitch, Inch	0.707
Standard Fuel Rods per Bundle	69
Special Fuel Rods per Bundle	12 ⁽⁸⁾
Spacers per Bundle	3
<u>Fuel Rod Cladding</u>	
Material	Zr-2
Standard Rod Tube Wall, Inch	0.040
Special Rod Tube Wall, Inch	0.040 and 0.060 ⁽⁹⁾
<u>Fuel Rods</u>	
Standard Rod Diameter, Inch	0.5625
Special Rod Diameter, Inch	0.5625
Fuel Stacked Density, Percent Theoretical	94 Pellet ⁽⁸⁾
Active Fuel Length, Inches - Standard Rod	70
- Special Rod	64.9 Central 68.4 Instrumented
Fill Gas	Helium

(8) Same as E-G fuel except that the bundle contains an instrumented fuel rod.

(9) Instrumented fuel rod is clad with tubing having 0.060-inch wall. Tubing contains axial grooves on inner surface. The depth of the grooves is 0.020 inch."

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- S - SPACER CAPTURE ROD (HIGH ENRICHMENT)
- H - HIGH ENRICHMENT RODS
- M - MIDDLE ENRICHMENT RODS
- T - TIE RODS (MIDDLE ENRICHMENT)
- L - LOW ENRICHMENT (POWER)
- C - CORRECTION RODS
- R - REMOVABLE COBALT RODS
- G - REMOVABLE FUEL RODS (MIDDLE ENRICHMENT)
- I - INSTRUMENTED FUEL RODS (MIDDLE ENRICHMENT)

Figure 5.5 - (Issued with Change No. 12 dated February 9, 1971.)
BIG ROCK POINT F FUEL
 WITH INSTRUMENTED FUEL ROD